

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

Claims 1-20 (canceled)

Claim 21 (currently amended): ~~The combination of Claim 20~~ A locking ring, liner and acetabular cup combination for an artificial hip joint, comprising in combination:

an acetabular cup having an exterior surface adapted to abut a hipbone and be held securely to the hip bone;

said acetabular cup having a generally concave interior surface;

said acetabular cup having an annular groove facing inward from said generally concave interior surface;

a liner having an outside surface adapted to mate within said generally concave interior surface of said acetabular cup;

said liner having a generally concave inside surface adapted to pivotably support a head of an artificial hip joint coupled to an upper end of a femur;

said liner having an annular seat facing outward from said outside surface of said liner;

a locking ring having a top side spaced from a bottom side by a ring thickness that is less than a thickness of said groove of said acetabular cup and less than a thickness of said seat of said liner;

an outer side spaced from an inner side by a ring width;

said outer side having an undeformed diameter sufficient to extend at least partially into said groove of said acetabular cup;

said inner side having an undeformed diameter sufficient to extend at least partially into said seat of said liner;

said ring width less than a difference between a diameter of said groove of said acetabular cup and a diameter of said seat of said liner;

a break in said ring, such that enlarging said break expands said outer side diameter and said inner side diameter, and narrowing said break reduces said outer diameter and said inner diameter;

a captured end adjacent said break and a free end adjacent said break; and

wherein said acetabular cup includes a pin affixed thereto adjacent said groove, and wherein a slot is provided at said captured end adapted to reside over said pin of said acetabular cup when said ring is located within said groove of said acetabular cup and within said seat of said liner, such that said ring holds said liner within said acetabular cup.

Claim 22 (original): The combination of Claim 21 wherein said slot is angled between said inner end and said outer end with said outer end extending further circumferentially along said ring than said inner end.

Claim 23 (original) The combination of Claim 22 wherein said captured end includes a nob extending beyond said outer side of said locking ring with said slot extending at least partially into said nob.

Claim 24 (original): The combination of Claim 22 wherein said free end includes a finger thereon, said finger extending beyond said outer side of said ring.

Claim 25 (currently amended): ~~The combination of Claim 20~~ A locking ring, liner and acetabular cup combination for an artificial hip joint, comprising in combination:

an acetabular cup having an exterior surface adapted to abut a hipbone and be held securely to the hip bone;

said acetabular cup having a generally concave interior surface;

said acetabular cup having an annular groove facing inward from said generally concave interior surface;

a liner having an outside surface adapted to mate within said generally concave interior surface of said acetabular cup;

said liner having a generally concave inside surface adapted to pivotably support a head of an artificial hip joint coupled to an upper end of a femur;

said liner having an annular seat facing outward from said outside surface of said liner;

a locking ring having a top side spaced from a bottom side by a ring thickness that is less than a thickness of said groove of said acetabular cup and less than a thickness of said seat of said liner;

an outer side spaced from an inner side by a ring width;

said outer side having an undeformed diameter sufficient to extend at least partially into said groove of said acetabular cup;

said inner side having an undeformed diameter sufficient to extend at least partially into said seat of said liner;

said ring width less than a difference between a diameter of said groove of said acetabular cup and a diameter of said seat of said liner;

a break in said ring, such that enlarging said break expands said outer side diameter and said inner side diameter, and narrowing said break reduces said outer diameter and said inner diameter;

a captured end adjacent said break and a free end adjacent said break; and

wherein said combination includes a deforming seal interposed between said outside surface of said liner and said interior surface of said acetabular cup, said deforming seal located adjacent a top bore extending between said interior surface of said acetabular cup and said exterior surface of said acetabular cup, said deforming seal adapted to be deformed when said ring is located within both said groove of said acetabular cup and said seat of said liner.

Claim 26 (original): The combination of Claim 25 wherein said deforming seal is attached to said outside surface of said liner.

Claim 27 (original): The combination of Claim 26 wherein said deforming seal includes a circular edge sized to abut said interior surface of said acetabular cup surrounding said top bore.

Claim 28 (original): The combination of Claim 27 wherein said circular edge of said deformable seal defines a largest diameter edge of a cone formed of a material similar to a material from which other portions of said liner are formed and with sufficient thickness between an outer conical surface and an inner conical surface of said cone to allow said edge to be deflected toward said outside surface of said liner, when said locking ring resides within said groove of said acetabular cup and said seat of said liner with said edge of said cone abutting said interior surface of said acetabular cup surrounding said top bore.

Claims 29-37 (canceled)